

WHAT IS CLAIMED IS:

1. A spraying system for applying one or more materials to an open mold while said mold resides within a molding machine, said spraying system comprising:

a spray head for directing said one or more materials onto portions of said mold;

a manipulator connected to said spray head, and adapted to position said spray head between halves of said open mold between molding cycles of said molding machine;

a source of said one or more materials in communication with said spray head;

a pressure boosting device positioned between each source of said one or more materials and said spray head, said pressure boosting device adapted to increase the pressure of the material passing therethrough; and

a control device in electronic communication with said manipulator and each pressure boosting device for controlling the operation thereof.

2. The spraying system of claim 1, wherein said mold is a die-cast mold.

3. The spraying system of claim 1, wherein said materials are selected from the group consisting of an anti-solder material and a die-lubricant.

4. The spraying system of claim 1, wherein said pressure boosting device increases the pressure of said one or more materials by passing each material through a separate chamber, wherein said material is acted upon by a force-exerting cylinder.

5. The spraying system of claim 4, further comprising a speed control device for controlling the speed of the force-exerting cylinder.

6. The spraying system of claim 4, further comprising an electronic solenoid valve connected to each force-exerting cylinder and in electronic communication with said control device, said solenoid valve for controlling the movement of the corresponding force-exerting cylinder in response to a signal from said control device.
7. The spraying system of claim 1, wherein the operation of said pressure boosting device and said spray head is sequenced such that a pressurized supply of said one or more materials from said pressure boosting device is always available when needed for emission by said spray head.
8. The spraying system of claim 1, further comprising a solenoid valve in electronic communication with said control device and located between each source of said one or more materials and said spray head, each solenoid valve for controlling the emission of a respective material from said spray head.
9. The spraying system of claim 1, further comprising an apparatus for providing linear movement of said manipulator substantially along the longitudinal axis of said molding machine.
10. The spraying system of claim 1, wherein said control device is in electronic communication with said molding machine, such that said control device controls the operation of said pressure boosting device and the spraying of said one or more materials onto portions of said mold by said spray head to coincide with a particular segment of the molding machine cycle.
11. The spraying system of claim 1, wherein said control device is a programmable logic controller.

12. The spraying system of claim 1, wherein said pressure boosting device supplies said one or more materials to said spray head at a substantially constant pressure.

13. A pressure boosting apparatus for use in a die spraying system, said pressure boosting apparatus comprising:

a chamber for receiving a sprayable material from a pressurized material source, said chamber located between said pressurized material source and an emitter of said material;

a force-exerting cylinder coupled to said chamber, for exerting a force on said material residing therein;

a conduit connecting said pressurized material source to said chamber;

a conduit connecting said chamber to said emitter of said material; and

a controller for sequencing the operation of said force-exerting cylinder such that a sufficient amount of said sprayable material at an increased pressure is supplied to said emitter from said chamber as needed.

14. The pressure boosting apparatus of claim 13, further comprising a speed control device for regulating the speed of the force-exerting cylinder.

15. The pressure boosting apparatus of claim 13, further comprising a solenoid valve for controlling the operation of the force-exerting cylinder.

16. The pressure boosting apparatus of claim 15, wherein said solenoid valve is controlled by said control device.

17. The pressure boosting apparatus of claim 13, further comprising at least one check valve for preventing the transport of pressurized material from said chamber toward said material source.

18. The pressure boosting apparatus of claim 13, wherein said sprayable material is supplied to said emitter from said chamber at a substantially constant pressure.

19. A method of ensuring that a sprayable material is supplied to the emitter of a mold spraying system at a sufficient pressure, said method comprising:

providing a pressurized source of said sprayable material;

providing a chamber in fluid communication with said source of said sprayable material;

coupling a force-exerting cylinder to said chamber;

providing a conduit to transport said sprayable material from said chamber to said emitter; and

providing a control device for actuating said force-exerting cylinder in preparation for operation of said emitter;

whereby said force-exerting cylinder exerts a force on said material residing in said chamber, thereby causing the pressure of said material to be increased before being transported to said emitter; and

whereby sprayable material of a substantially predetermined pressure is supplied to said emitter as needed for spraying said mold, even when the pressure of said sprayable material supplied by said source is less than the predetermined pressure.

20. The method of claim 19, further comprising providing a solenoid valve in electronic communication with said control device for operating said force-exerting cylinder.

21. The method of claim 19, further comprising providing a speed control device for regulating the speed of the force-exerting cylinder.

22. The method of claim 19, further comprising prohibiting the flow of sprayable material of increased pressure from said chamber toward said source.

23. The method of claim 19, wherein said sprayable material is supplied to said emitter at a substantially constant pressure.

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